

WHAT IS CLAIMED IS

1. A method for transmitting and receiving data using a continuous tone control squelch system (CTCSS), comprising the steps of:

a) dividing an effective frequency band of said CTCSS into regular intervals, setting the divided intervals as channels and assigning data code values respectively to the set channels;

b) for data transmission, successively transmitting CTCSS frequency signals corresponding respectively to code values of specific data; and

c) for data reception, converting successively received CTCSS frequency signals into corresponding data code values, respectively.

2. The method as set forth in Claim 1, wherein said effective frequency band of said CTCSS is 67Hz~250Hz.

3. The method as set forth in Claim 1, wherein said step b) includes the step of transmitting said CTCSS frequency signals corresponding respectively to said code values of said specific data together with a user's voice signal over a carrier; and wherein said step c) includes the step of receiving a carrier signal containing a voice signal and CTCSS

frequency signals from another party, separating the voice signal and CTCSS frequency signals from the received carrier signal, performing an audio signal processing operation for the separated voice signal and converting the separated CTCSS  
5 frequency signals into corresponding data code values, respectively; whereby the data transmission and data reception are conducted without stopping a voice conversation.

4. The method as set forth in Claim 1, wherein said data  
10 transmitted and received using said CTCSS frequency signals is global positioning system (GPS) data.

5. The method as set forth in Claim 1, wherein said step  
a) includes the step of, if the number of code bits is  $n$ ,  
15 dividing said effective frequency band of said CTCSS into  $2^n$  channels and assigning data code values respectively to center frequencies of the divided channels.

6. An apparatus for transmitting and receiving data using  
20 a continuous tone control squelch system (CTCSS) by a first wireless communication terminal one-to-one communicating with a second wireless communication terminal, said first and second wireless communication terminals being the same in construction, said apparatus comprising:

25 transmitter means including a first data processor for

converting specific data to be transmitted into CTCSS frequency signals on the basis of a pre-registered CTCSS frequencies-by-codes table, a CTCSS frequency generator for generating the converted CTCSS frequency signals under control  
5 of said first data processor, and a radio transmitter for mixing said CTCSS frequency signals from said CTCSS frequency generator with a voice signal from said first wireless communication terminal and transmitting the mixed result to said second wireless communication terminal over a  
10 predetermined carrier; and

receiver means including a radio receiver for receiving a carrier signal containing CTCSS frequency signals and a voice signal from said second wireless communication terminal and separating the CTCSS frequency signals and voice signal from  
15 the received carrier signal, a CTCSS frequency discriminator for discriminating which frequencies of said pre-registered CTCSS frequencies-by-codes table are channel frequencies of said CTCSS frequency signals separated by said radio receiver, and a second data processor for converting said CTCSS  
20 frequency signals separated by said radio receiver into the original data on the basis of the pre-registered CTCSS frequencies-by-codes table and the results discriminated by said CTCSS frequency discriminator.

25 7. The apparatus as set forth in Claim 6, wherein said

apparatus is installed in each of said first and second wireless communication terminals to transmit data about the position of one terminal to the other terminal simultaneously with voice communication.

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8. The apparatus as set forth in Claim 6, wherein said transmitter means further includes a first global positioning system (GPS) set for receiving GPS data, calculating a position value of said first wireless communication terminal on the basis of the received GPS data and outputting the calculated position value as said specific data to be transmitted, to said first data processor; and wherein said receiver means further includes a second GPS set for processing said data converted by said second data processor to output information regarding the position of said second wireless communication terminal; whereby said apparatus transmits GPS information of said first wireless communication terminal to said second wireless communication terminal together with said voice signal from said first wireless communication terminal, receives GPS information and said voice signal from said second wireless communication terminal and displays the position of said second wireless communication terminal on the basis of the received GPS information.

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9. The apparatus as set forth in Claim 8, wherein said first GPS set and second GPS set are integrated into a single GPS set, said single GPS set being adapted for receiving a GPS satellite signal, calculating the position value of said first  
5 wireless communication terminal on the basis of the received GPS satellite signal, outputting the calculated position value as said specific data to be transmitted, to said first data processor in said transmitter means, processing said data converted by said second data processor in said receiver means  
10 and displaying the position of said second wireless communication terminal in accordance with the processed result.